Channa orientalis Schneider, 1801
Ceylon Snakehead

Type species of *Channa* Scopoli, 1777

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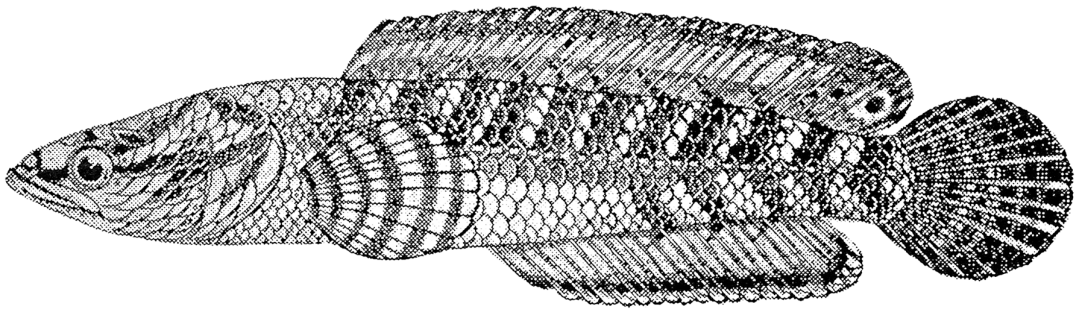

After Munro, 1955; female

Original description: *Channa orientalis* Schneider, in Bloch and Schneider, 1801:496, pl. 90. M.E. Blochii, Systema Ichthyologiae iconibus cx illustratum. Post obitum auctoris opus inchoatum absoluit, correxit, interpolavit Jo.Gottlob Schneider, saxo. Sumtibut Austoris Impressum et Bigliopolio Sanderiano Commissum, Beroloni. i-lx + 1-584, pls. 1-110. Type locality: "Habitat in India orientale" (=east India). No types known (Paepke, 1993). Paepke (1993) noted that Schneider's description was based on an illustration in Gronovius (1763).

Synonyms: There has been much confusion regarding the taxonomy of the Ceylon snakehead. Many have considered this species to be part of what we term the *Channa gachua* complex as reflected in the following synonymy, all of which are synonyms of *C. gachua* and are **invalid** for *C. orientalis* (Ralf Britz, personal commun., 2003).

Ophiocephalus auranticus Hamilton, 1822:69, 368, pl. 23, fig. 22.

Ophicephalus marginatus Cuvier, 1829:230, *fide* Menon, 1999:275.

Ophicephalus coramota Cuvier, 1831:414, *fide* Menon, 1999:275.

Ophicephalus fuscus Cuvier, 1831:414, *fide* Menon, 1999:275.

Ophicephalus limbatus Cuvier, 1831, no p., pl. 201, *fide* Menon, 1999:275.

Ophicephalus marginatus Cuvier, 1831, no p., pl. 201, *fide* Menon, 1999:275.
Ophicephalus montanus McClelland & Griffith, 1842:583, *fide* Menon, 1999:275.
Philypnoides surakartensis Bleeker, 1849:19, *fide* Menon, 1999:275.
Ophiocephalus apus Canestrini, 1861:77, pl. 4, fig. 7.
Ophiocephalus kelaartii Günther, 1861:472, *fide* Talwar and Jhingran, 1991:1019, and Menon, 1999:275.
(?)*Channa burmanica* Chaudhuri, 1919:284, pl. 22, fig. 4.
Ophiocephalus gachua kelaarti Günther: Munro, 1955:100.
Note: Although *Channa burmanica* is listed as a synonym, some authors recognize this species as valid (Peter Ng, personal commun., *in* Vierke, 1991b; Ralf Britz, personal commun., 2003).

Common names: **Ceylon snakehead**; Asiatic snakehead; smooth breasted snakehead (Munro, 1955; Pethiyagoda, 1991); green snakehead (Ettrich, 1989); kola kanaya (Pethiyagoda, 1991).

Native range: *Channa orientalis* is endemic to southwestern Sri Lanka (Pethiyagoda, 1991; Ralf Britz, personal commun., 2003), specifically to the "wet zone" and "lower south western hills" (Pethiyagoda, 1991). Mendis (1954) included both *C. orientalis* and *Ophicephalus gachua* from Sri Lanka, commenting that the former may or may not possess pelvic fins. The Ceylon snakehead, however, lacks pelvic fins (Deraniyagala, 1929; Pethiyagoda, 1991; Ralf Britz, personal commun., 2003). Talwar and Jhingran (1992) noted that *C. orientalis* lacking pelvic fins occurs in Sri Lanka, Myanmar, and Java; nevertheless, reports of this fish from Myanmar and Java refer to members of the *C. gachua* complex. DeWitt (1960) considered absence of pelvic fins in snakeheads as an anomalous character; this conclusion, however, is not supported by *C. orientalis* or other snakeheads that lack pelvics (*C. asiatica, C. bleheri, C. burmanica,* apparently some members of the *C. gachua* complex, and *C. nox*).

Munro (1955) correctly identified the snakehead species lacking pelvic fins in Sri Lanka as *Channa orientalis* and treated the taxon with pelvics as *C. gachua kelaarti*. Lim and others (1990) noted that Myers and Shapovalov (1932) synonymized *C. gachua* with *C. orientalis*, but suggested these species are separate with the latter lacking pelvic fins. Because *C. orientalis* is endemic to Sri Lanka, records from southern India and elsewhere are erroneous.

Introduced range: No introductions known, although its presence in the Greater Sunda Islands (Kottelat, 1985) would represent an introduction if the species is indeed *Channa orientalis*. More than likely, however, Kottelat's (1985) reference is to a species of the *C. gachua* complex. Pethiyagoda (1991) noted a possible introduction in the Mahaweli basin of Sri Lanka.

Size: Sometimes cited as the smallest species of snakehead (Ismail, 1989; Talwar and Jhingran, 1992), a comment often also used for *Channa gachua*. Pethiyagoda (1991) noted that this snakehead typically does not exceed 10 cm and, therefore, is significantly smaller than *C. gachua*.

Habitat preference: Deraniyagala (1929) and Munro (1955) cited "clean freshwater pools close to streams" as the preferred habitat. Pethiyagoda (1991) stated that it occurs in "shaded, clear, flowing water with a silt or gravel substrate" and "shallow rivulets barely deeper than its own body." He also predicted pollution and destruction of rainforest habitat in Sri Lanka would likely negatively affect populations of this species.

Temperature range: No specific information found. Because the species is endemic to Sri Lanka (unlikely), it is strictly tropical.

Reproductive habits: Ettrich (1989) reported this species as a mouthbrooder. He described the basic body color as brown, remarking that the flanks of males sometimes are dove gray with a violet cast, becoming paler ventrally. The dorsal and caudal fins of males are "sky-blue," black and orange, with a blue anal fin margined in black and white with black rays, and the eye red. Reproductively active females change from brown to shades of blue. During spawning, the male wraps itself around the female near the surface, after which the male broods the eggs in its oral cavity, typically remaining in an upper corner of an aquarium. Fry remain in the male parent's mouth until able to survive on their own. Females sometimes retrieve stray fry into their oral cavities, returning the young to the

parental care of the male. Fry are never ejected via the mouth but rather leave via the gill openings. This is somewhat similar to behavior observed in *Channa bleheri* (Vierke, 1991b). Both parents provide parental care with the female defending territory. It is unknown if the Ceylon snakehead is a mouthbrooder only in aquaria (Ettrich, 1989).

Ettrich (1989) assumed that there were two forms of *Channa orientalis* in Sri Lanka, one with and one without pelvic fins, but remarked that there were no hybrids known between these forms. The one with pelvic fins, however, is part of the *C. gachua* complex (Deraniyagala, 1929; Pethiyagoda, 1991; Ralf Britz, personal commun., 2003).

Feeding habits: Moyle and Senanayake (1984) determined that most gut contents consisted of terrestrial insects, the remainder comprised of trichopterans and a few fishes. Pethiyagoda (1991) noted that in aquaria, chopped steak is readily accepted by this snakehead.

Characters: Gular part of head without patch of scales. Pelvic fins absent. Predorsal scales 6-7; scales from posterior border of orbit to posterior edge of preopercle 5-6. Lateral line scales 36-42. Anal fin rays 20-22; dorsal fin rays 30-34. Pectoral fins with 13-15 rays. Ocellated spot at posterior end of dorsal fin, above caudal peduncle, in juveniles and females. Lower jaw with 10-20 canines behind single row of villiform teeth, the latter expanding to about 7 rows at jaw symphysis; prevomer and palatines with canine-like teeth.

Commercial importance in the United States: Sometimes listed on aquarist-oriented websites, but often misidentified.

Commercial importance in native range: Pethiyagoda (1991) stated, “Small numbers are used by the aquarium fish export trade.”

Environmental concerns: Perhaps a thrust predator like other snakeheads. Because this species is endemic to Sri Lanka, its ability to establish in North America, if introduced, would be limited to subtropical areas (extreme southern Florida, Hawaii) or warm thermal springs.

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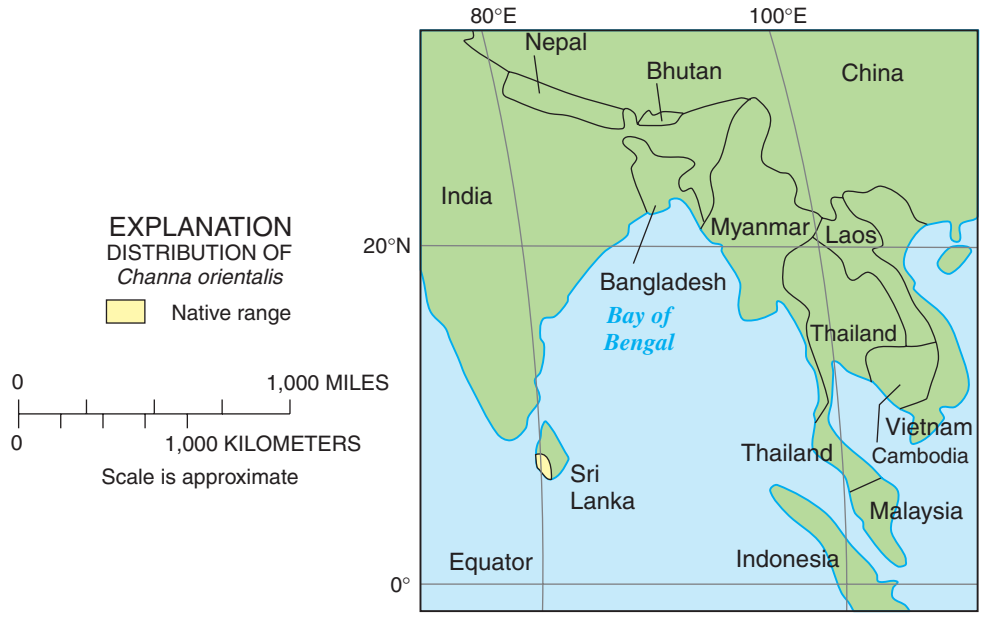
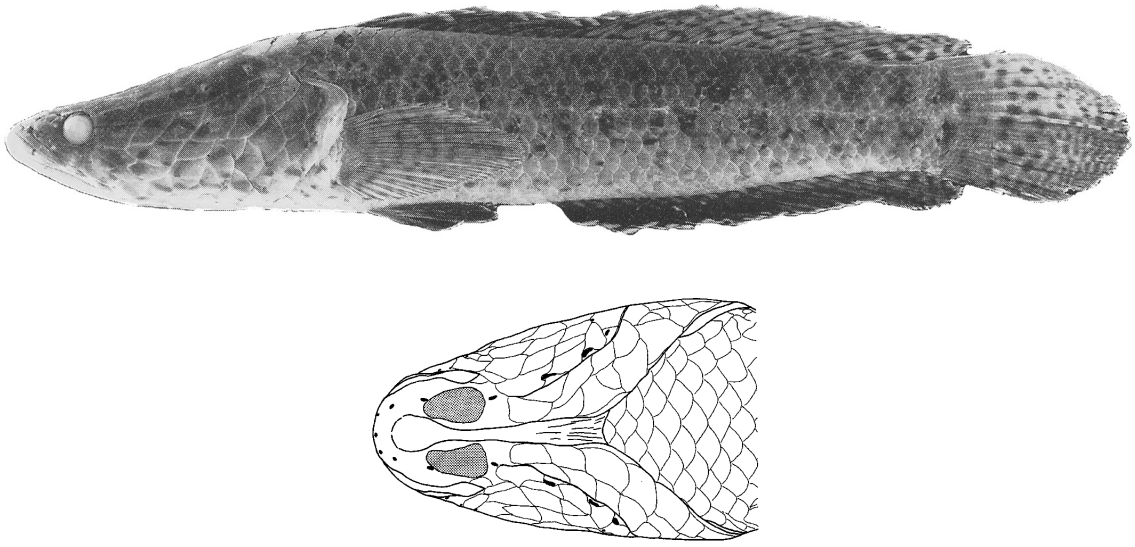


Channa orientalis

Channa panaw Musikasinthorn, 1998
Panaw Snakehead



Upper image: holotype, KUMF 3050, 151.7 mm standard length. **Lower image:** ventral view of head showing enlarged scales on lower jaw; paratype, KUMF 3060. Reprinted with permission from Prachya Musikasinthorn, author, and Tomoki Sunobe, Secretary of the Ichthyological Society of Japan, from: Musikasinthorn, Prachya. 1998. *Channa panaw*, a new channid fish from the Irrawaddy and Sittang River basins, Myanmar. Ichthyol. Res. 45(4):355-362.

Original description: *Channa panaw* Musikasinthorn, 1998:356. *Channa panaw*, a new channid fish from the Irrawaddy and Sitang River basins, Myanmar. Ichthyological Research 45(4):355-362, 7 figs. Type locality: Yangon fish market, Yangon, Myanmar. Holotype: KUMF 3050. Paratypes: KUMF 3051; KUMF 3060; KUMF 3061; KUMF 3062; NSMT-P 36121; NSMT-P 36129; KUMF 3052; KUMF 3053; KUMF 3054; NRM 27421; and ANSP 77016.

Synonyms: No synonyms.

Common names: **panaw snakehead**; nga panaw (Myanmar).

Native range: Ayeyarwaddy (=Irrawaddy) and Sittang River basins, Myanmar (Musikasinthorn, 1998).

Introduced range: No introductions known.

Size: No specific information in literature, but known to grow to at least 17 cm (Musikasinthorn, 1998).

Habitat preference: No specific information, but appears to prefer rivers.

Temperature range: No specific information. Native range (about 16-24º N) indicates this species to be subtropical to tropical.

Reproductive habits: No information, but probably a nest builder as are most other snakeheads.

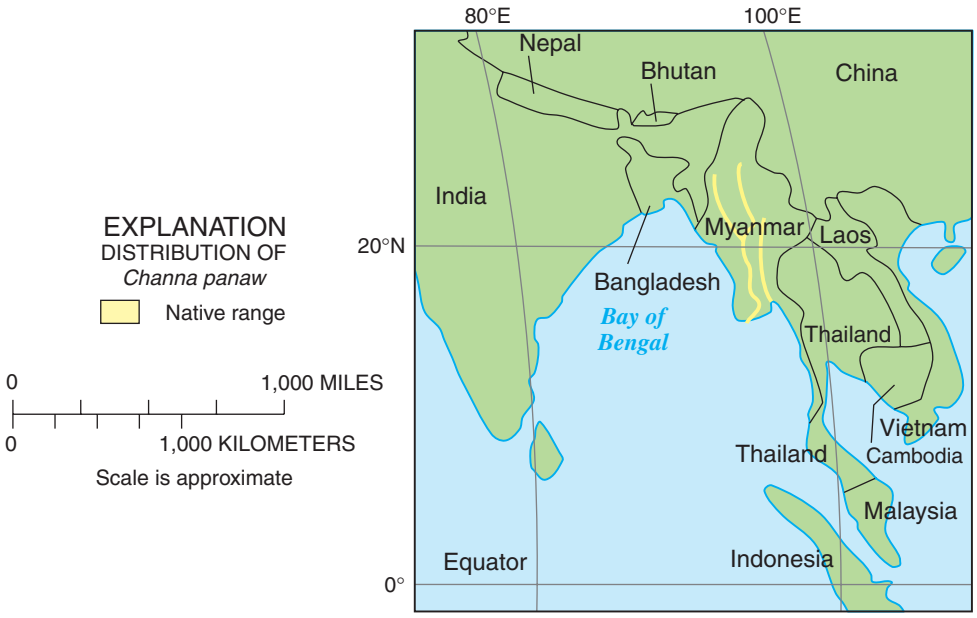
Feeding habits: No information. Nevertheless, Musikasinthorn (1998) stated this species is most closely related to *Channa punctata*, which suggests adults feed primarily on other fishes and insects.

Characters: Gular part of head without patch of scales. One large scale on either underside of lower jaw, rarely two on one side of jaw. Lateral line scales 39-41; predorsal scales 14-17. Dorsal fin rays 32-35; anal fin rays 32-35; pectoral rays 17-20. Pelvic fin length always more than 50 percent of pectoral fin length. Most similar to *Channa punctata*, but differs in having a narrow, pointed snout, pelvic fins 50 percent or more longer than the pectorals, and there is one large scale (rarely two on one side) on either underside of the lower jaw.

Commercial importance in the United States: None known. Not listed on aquarist-oriented websites.

Commercial importance in native range: No information, but its presence in markets in Myanmar (Musikasinthorn, 1998) indicates that it is fished commercially.

Environmental concerns: Like the closely related *Channa punctata*, this species is probably a thrust predator on other fishes and insects.



Channa panaw